UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,609	10/30/2001	Jim Pinkerton	210721	6601

23460	7590	02/24/2005

LEYDIG VOIT & MAYER, LTD
TWO PRUDENTIAL PLAZA, SUITE 4900
180 NORTH STETSON AVENUE
CHICAGO, IL 60601-6780

EXAMINER
TAYLOR, NICHOLAS R

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/016,609	PINKERTON, JIM
	Examiner	Art Unit
	Nicholas R Taylor	2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 October 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-27</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-27</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>30 October 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/28/2003</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-27 have been examined and are rejected.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-6, 8-11, 13-16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lothberg et al. (US Patent 6,804,776) and Cheriton et al. (US Patent 6,675,200.)

4.   As per claim 1, Lothberg teaches a method to transform a non self-describing segment of a transport protocol for an upper layer protocol, the method comprising the steps of:

aligning a framing header; and (Lothberg, column 4, lines 2-15)

putting segment description information in the framing header (Lothberg, column 4, lines 44-60.)

Lothberg fails to teach the use of self-describing segments. Cheriton teaches the use of self-describing description information placed in framing headers (Cheriton,

column 3, lines 39-57.) It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Lothberg and Cheriton to provide the self-describing information of Cheriton in the system of Lothberg, because doing so would enable improved performance by avoiding traditional buffer-to-buffer copying in non direct data transfers (Cheriton, column 3, lines 28-38.)

5.   As per claim 2, Lothberg-Cheriton teaches the system further comprising the step of limiting an upper layer protocol data unit size to the smaller of a maximum transport segment size and a size that will fit within the non self-describing segment (Lothberg, column 6, lines 34-39.)

6.   As per claim 3, Lothberg-Cheriton teaches the system further wherein the non self-describing segment is being sent on a connection to a destination address, the method including the step of terminating the connection if the upper layer protocol data unit is greater than the smaller of a maximum transport segment size and the size that will fit within the non self-describing segment (Lothberg, column 6, lines 34-39, wherein the segment will not be sent if there is insufficient space.)

7.   As per claim 4, Lothberg-Cheriton teaches the system further comprising the step of putting a destination buffer id (Cheriton, column 4, lines 6-15) and offset in the non self-describing segment (Cheriton, column 4, lines 36-44.)

8.   As per claim 5, Lothberg-Cheriton teaches the system further comprising the step of putting a destination buffer id (Cheriton, column 4, lines 6-15) and a destination address in the non self-describing segment (Lothberg, column 3, lines 60-65.)

9.   As per claims 6 and 11, Lothberg teaches a method to transform a non self-describing segment of a transport protocol for an upper layer protocol comprising the steps of:

obtaining segment description information; and (Lothberg, column 4, lines 44-60)

putting the segment description information in a header aligned with a header of the non-self describing segment or the header of the non self-describing segment (Lothberg, column 4, lines 2-15.)

Lothberg fails to teach the use of self-describing segments. Cheriton teaches the use of self-describing description information placed in framing headers (Cheriton, column 3, lines 39-57.) It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Lothberg and Cheriton to provide the self-describing information of Cheriton in the system of Lothberg, because doing so would enable improved performance by avoiding traditional buffer-to-buffer copying in non direct data transfers (Cheriton, column 3, lines 28-38.)

10.   As per claims 8 and 13, Lothberg-Cheriton teaches the system further comprising the step of putting zero-copy information in the non self-describing segment (Cheriton, column 4, lines 5-44.)

11.   As per claim 9, Lothberg-Cheriton teaches the system further having computer-executable instructions for performing the step of putting a destination buffer id (Cheriton, column 4, lines 6-15) and a destination address in the non self-describing segment (Lothberg, column 3, lines 60-65.)

12.   As per claim 10, Lothberg-Cheriton teaches the system further having computer-executable instructions for performing the step of putting a destination buffer id (Cheriton, column 4, lines 6-15) and a data size (Cheriton, column 4, lines 21-35) and offset in the non self-describing segment (Cheriton, column 4, lines 36-44.)

13.   As per claim 14, Lothberg-Cheriton teaches the system further wherein the step of putting segment description information in the header includes the step of putting a destination buffer id (Cheriton, column 4, lines 6-15) and a destination address in the header (Lothberg, column 3, lines 60-65.)

14.   As per claim 15, Lothberg-Cheriton teaches the system further wherein the step of putting segment description information in the header includes the step of putting the data size (Cheriton, column 4, lines 21-35) and an offset in the non self-describing segment (Cheriton, column 4, lines 36-44.)

15.   As per claim 16, Lothberg teaches a method of sending data between an upper

layer sender and an upper layer receiver through a transport having a transport protocol

that sends data in at least one transport segment, the method comprising the steps of:

obtaining segment description information; (Lothberg, column 4, lines 44-60)

aligning a framing header with the at least one transport segment; (Lothberg,

column 4, lines 2-15)

putting the segment description information in the framing header (Lothberg,

column 4, lines 44-60)

putting the data into the at least one transport segment; and sending the at least

one transport segment to the upper layer receiver (Lothberg, column 3, line 65 to

column 4, line 15.)

Lothberg fails to teach determining if the at least one transport segment is a non

self-describing segment and the use of self-describing segments.   Cheriton teaches

determining if a transport segment is a non self-describing segment (Cheriton, column

3, lines 48-57, wherein the TCP packet is checked for setting the RDMA option bit) and

the use of self-describing description information placed in framing headers (Cheriton,

column 3, lines 39-57.) It would have been obvious to one of ordinary skill in the art, at

the time the invention was made, to have combined Lothberg and Cheriton to provide

the self-describing information of Cheriton in the system of Lothberg, because doing so

would enable improved performance by avoiding traditional buffer-to-buffer copying in

non direct data transfers (Cheriton, column 3, lines 28-38.)

16.   As per claim 18, Lothberg-Cheriton teaches the system further wherein the data comprises at least one upper layer protocol data unit and wherein the step of putting the data into a transport segment comprises the step of putting an integral number of upper layer protocol data units into the a transport segment (Cheriton, column 3, lines 39-58.)

17.   Claims 7 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lothberg et al. (US Patent 6,804,776) and Cheriton et al. (US Patent 6,675,200), further in view of Darnell et al. (US Patent 6,381,647.)

18.   As per claim 7, Lothberg-Cheriton teaches the system further wherein the segment description information includes a data size of data (Cheriton, column 4, lines 21-35) in the non self-describing segment, the computer-readable medium having further computer-executable instructions for performing the step of determining if the data size exceeds the smaller of a maximum transport segment size and a size that will fit within the non self-describing segment. However, Lothberg-Cheriton fails to teach generating an error message.

Darnell teaches generating error messages on a network (Darnell, column 4, lines 20-28.) It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Lothberg-Cheriton and Darnell to provide the error message generation of Darnell in the system of Lothberg-Cheriton, because doing so would enable notification of errors.

19.   As per claim 19, Lothberg-Cheriton teaches the system further comprising the step of determining if the data is larger than the smaller of a maximum transport segment size and a size that will fit within the transport segment. However, Lothberg-Cheriton fails to teach generating an error message.

Darnell teaches generating error messages on a network (Darnell, column 4, lines 20-28.) It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Lothberg-Cheriton and Darnell to provide the error message generation of Darnell in the system of Lothberg-Cheriton, because doing so would enable notification of errors.

20.   Claims 12, 17, and 20-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lothberg et al. (US Patent 6,804,776) and Cheriton et al. (US Patent 6,675,200), further in view of Giora et al. (US PGPub 2002/0049875.)

21.   As per claim 12, Lothberg-Cheriton teaches the system further wherein the segment description information includes a data size of data in the non self-describing segment (Cheriton, column 4, lines 21-35.) However, Lothberg-Cheriton fails to teach the method including the step of fragmenting the data into self-describing segments if the data size exceeds the smaller of a maximum transport segment size and a size that will fit within the non-self describing segment.

Giora teaches fragmenting transport packets into smaller segment sizes for transport across a network (Giora, paragraph 0021-0022.) It furthermore would have

been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Lothberg-Cheriton and Giora to provide the data communication interface of Giora in the system of Lothberg-Giora, because doing so would allow an efficient transfer of data between source and destination with minimum delay (Giora, paragraph 0004.)

22.   As per claim 17, Lothberg-Cheriton teaches the system further wherein the transport segments have a transport segment size and wherein the step of putting the data into the at least one transport segment includes placing the data into self-describing transport segments (Lothberg, column 3, line 65 to column 4, line 15, and column 4, lines 44-60) if a size of the data is larger than the transport segment size (Lothberg, column 6, lines 34-39.)   However, Lothberg-Cheriton fails to teach fragmenting the data into the segments.

Giora teaches fragmenting transport packets into smaller segment sizes for transport across a network (Giora, paragraph 0021-0022.)   It furthermore would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have combined Lothberg-Cheriton and Giora to provide the data communication interface of Giora in the system of Lothberg-Giora, because doing so would allow an efficient transfer of data between source and destination with minimum delay (Giora, paragraph 0004.)

23.   As per claims 20 and 24, Lothberg teaches a processing unit performing the

steps of:

if the transport segment is a non self-describing segment: obtaining segment

description information; and (Lothberg, column 4, lines 44-60)

putting the segment description information in one of a header aligned with a non

self-describing segment header and the non self-describing segment header (Lothberg,

column 4, lines 44-60.)

Lothberg fails to teach the use of a network interface card and memory buffers

for receiving transport segments. Cheriton teaches self-describing segments (Cheriton,

column 3, lines 39-57) and the use of memory buffers (Cheriton, column 4, lines 5-9.) It

would have been obvious to one of ordinary skill in the art, at the time the invention was

made, to have combined Lothberg and Cheriton to provide the self-describing

information of Cheriton in the system of Lothberg, because doing so would enable

improved performance by avoiding traditional buffer-to-buffer copying in non direct data

transfers (Cheriton, column 3, lines 28-38.)

Giora teaches using a network card (Giora, paragraphs 0007 and 0019) and

memory buffers (Giora, paragraph 0036) in transferring data across a network. It

furthermore would have been obvious to one of ordinary skill in the art, at the time the

invention was made, to have combined Lothberg-Cheriton and Giora to provide the data

communication interface of Giora in the system of Lothberg-Giora, because doing so

would allow an efficient transfer of data between source and destination with minimum

delay (Giora, paragraph 0004.)

24.   As per claims 21 and 25, Lothberg-Cheriton-Giora teaches the system further wherein the processing unit aligns the header with the non self-describing segment header (Lothberg, column 4, lines 2-15.)

25.   As per claims 22 and 26, Lothberg-Cheriton-Giora teaches the system further wherein the processing unit limits an upper layer protocol data size to the smaller of a maximum transport segment size and a size that will fit within the non self-describing segment (Lothberg, column 6, lines 34-39.)

26.   As per claims 23 and 27, Lothberg-Cheriton-Giora teaches the system further wherein the transport segments have a transport segment size and wherein the processing unit fragments data into a plurality of transport segments if a size of the data is larger than the transport segment size (Giora, paragraphs 0021-0022.)

Conclusion

27.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes US Patents: 6,434,620 and 6,819,679.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas Taylor whose telephone number is (571) 272-

3889. The examiner can normally be reached on Monday-Friday, 8:00am to 5:30pm, with alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3718.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nicholas Taylor
Examiner
Art Unit 2141

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER